

CLAIMS:

1. Storage system comprising a record carrier and a storage device,
 - the record carrier having an information plane that is provided with a pattern of an electro-magnetic material constituting an array of bit locations, the presence or absence of said material at the information plane representing a value of a bit location,
5 and
 - the device having an interface surface for cooperating with the information plane, which interface surface is provided with an array of electro-magnetic sensor elements that are sensitive to the presence of said electro-magnetic material within a near-field
10 working distance,
 - which record carrier can be coupled to and removed from the storage device, and
 - the system having alignment means for positioning the bit locations near the sensor elements within the near-field working distance between a bit location and the
15 corresponding sensor element during said coupling.
2. Record carrier for use in the system as claimed in claim 1, the record carrier comprising an information plane on a substrate that is provided with a pattern of an electro-magnetic material constituting an array of bit locations, characterized in that the presence or
20 absence of said material at the information plane represents a value of a bit location, and in that the record carrier comprises alignment means for positioning the bit locations near the sensor elements within a near-field working distance between a bit location and the corresponding sensor element during said coupling.
- 25 3. Record carrier as claimed in claim 2, wherein the pattern at the information plane is constituted by a layer of the electro-magnetic material on the substrate having protruding portions or depressed portions that bring the electro-magnetic material of the layer either outside or inside the near-field working distance.

4. Record carrier as claimed in claim 2, wherein the pattern at the information plane is constituted by the substrate covered by a pattern of areas of the electro-magnetic material, or by the presence or absence of particles of said material embedded in a substrate.
- 5 5. Record carrier as claimed in claim 2, 3 or 4, wherein the electro-magnetic material has a soft magnetic property for being detectable by said sensor elements, or wherein the electro-magnetic material has an electrically conductive property for being detectable by said sensor elements.
- 10 6. Record carrier as claimed in claim 2, 3 or 4, wherein the substrate is of a flexible material for allowing positioning of the bit locations near the sensor elements within the near-field working distance between a bit location and the corresponding sensor element.
- 15 7. Record carrier as claimed in claim 2, wherein the record carrier comprises a cartridge having an opening for exposing the information plane when coupled to the device and a cover for closing the opening when removed from the device.
8. Record carrier as claimed in claim 7, wherein the cartridge comprises cleaning means (46) for cleaning the information plane and/or the interface surface.
- 20 9. Record carrier as claimed in claim 2, wherein the alignment means comprise mechanical guiding elements for cooperating with complementary mechanical receiving elements of the storage device.
- 25 10. Storage device for use in the system as claimed in claim 1, characterized in that the device comprises
- an interface surface for cooperating with the information plane, which interface surface is provided with an array of electro-magnetic sensor elements that are sensitive to the presence of said electro-magnetic material, and
 - 30 - alignment means for positioning the sensor elements near the bit locations within a near-field working distance between a sensor element and the corresponding bit location during said coupling.

11. Device as claimed in claim 10, wherein the sensor elements are arranged for generating an electro-magnetic field and detecting the presence of said electro-magnetic material in at least one of the following ways:

- generating a magnetic field and detecting the magnetic field as influenced by the presence of absence of the electro-magnetic material via a soft magnetic property; or
- generating an electrical field and detecting the electrical field as influenced by the presence or absence of the electro-magnetic material via a capacitive coupling; or
- generating a fluctuating magnetic field and detecting the magnetic field as influenced by the presence of absence of the electro-magnetic material via eddy currents.

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12. Device as claimed in claim 10, wherein the alignment means comprise an actuator for positioning the sensor elements and/or the record carrier.

13. Device as claimed in claim 12, wherein the actuator for positioning the sensor elements and/or the record carrier is controlled in dependence of a read-out signal from the electro-magnetic elements.

14. Device as claimed in claim 10, wherein the array of sensor elements has substantially less sensor elements than the total number of bit locations of the record carrier, and the alignment means) are arranged for positioning said array or the record carrier at different alignment positions that in combination cover the total number of bit locations.

15. Device as claimed in claim 10, wherein the alignment means comprise mechanical receiving elements for cooperating with complementary mechanical guiding elements of the record carrier.

16. Device as claimed in claim 10, wherein the alignment means comprise means for generating an attracting field for attracting the record carrier to the interface surface, in particular an electrostatic field.